

Amendments to the Specification

Please replace the paragraph beginning at line 8 of page 1 as follows:

The present application is a continuation of ~~co-pending~~ U.S. patent application entitled "SUBCUTANEOUS ELECTRODE FOR TRANSTHORACIC CONDUCTION WITH HIGHLY MANEUVERABLE INSERTION TOOL," having Serial No. 09/940,356, filed August 27, 2001, abandoned, which is a continuation-in-part of U.S. patent application entitled "UNITARY SUBCUTANEOUS ONLY IMPLANTABLE CARDIOVERTER-DEFIBRILLATOR AND OPTIONAL PACER," having Serial No. 09/663,606, filed September 18, 2000, pending now U.S. Pat. No. 6,647,292, and U.S. patent application entitled "~~UNITARY~~ SUBCUTANEOUS ONLY IMPLANTABLE CARDIOVERTER-DEFIBRILLATOR AND OPTIONAL PACER," having Serial No. 09/663,607, filed September 18, 2000, pending now U.S. Pat. No. 6,721,597, of which both applications are assigned to the assignee of the present application, and the disclosures of both applications are hereby incorporated by reference.

Please replace the paragraph beginning at line 19 of page 1 as follows:

In addition, the present application is related to U.S. patent application Ser. No. 09/940,283, filed August 27, 2001 and entitled "DUCKBILL-SHAPED IMPLANTABLE CARDIOVERTER-DEFIBRILLATOR CANISTER AND METHOD OF USE," now U.S. Pat. No. 7,065,407; U.S. patent application Ser. No. 09/940,371, filed August 27, 2001 and entitled "CERAMICS AND/OR OTHER MATERIAL INSULATED SHELL FOR ACTIVE AND NON-ACTIVE S-ICD CAN," now U.S. Pat. No. 7,039,465; U.S. patent application Ser. No. 09/940,468, filed August 27, 2001 and entitled "SUBCUTANEOUS ELECTRODE FOR TRANSTHORACIC CONDUCTION WITH IMPROVED INSTALLATION CHARACTERISTICS," abandoned; U.S. patent application Ser. No. 09/941,814, filed August 27, 2001 and entitled "SUBCUTANEOUS ELECTRODE WITH IMPROVED CONTACT SHAPE FOR TRANSTHORACIC CONDUCTION," abandoned; U.S. patent application Ser. No. 09/940,340, filed August 27, 2001 and entitled "SUBCUTANEOUS ELECTRODE FOR TRANSTHORACIC CONDUCTION WITH LOW-PROFILE INSTALLATION APPENDAGE AND METHOD OF DOING SAME," now U.S. Pat. No.

6,937,907; U.S. patent application Ser. No. 09/940,287, filed August 27, 2001 and entitled "SUBCUTANEOUS ELECTRODE FOR TRANSTHORACIC CONDUCTION WITH INSERTION TOOL," abandoned; U.S. patent application Ser. No. 09/940,377, filed August 27, 2001 and entitled "METHOD OF INSERTION AND IMPLANTATION FOR IMPLANTABLE CARDIOVERTER-DEFIBRILLATOR CANISTERS," now U.S. Pat. No. 6,866,044; U.S. patent application Ser. No. 09/940,599, filed August 27, 2001 and entitled "CANISTER DESIGNS FOR IMPLANTABLE CARDIOVERTER-DEFIBRILLATORS," now U.S. Pat. No. 6,950,705; U.S. patent application Ser. No. 09/940,373, filed August 27, 2001 and entitled "RADIANT CURVED CURVE SHAPED IMPLANTABLE CARDIOVERTER-DEFIBRILLATOR CANISTER," now U.S. Pat. No. 6,788,974; U.S. patent application Ser. No. 09/940,273, filed August 27, 2001 and entitled "CARDIOVERTER-DEFIBRILLATOR HAVING A FOCUSED SHOCKING AREA AND ORIENTATION THEREOF," now U.S. Pat. No. 7,069,080; U.S. patent application Ser. No. 09/940,378, filed August 27, 2001 and entitled "BIPHASIC WAVEFORM FOR ANTI-BRADYCARDIA PACING FOR A SUBCUTANEOUS IMPLANTABLE CARDIOVERTER-DEFIBRILLATOR," now U.S. Pat. No. 7,146,212; U.S. patent application Ser. No. 09/940,266, filed August 27, 2001 and entitled "BIPHASIC WAVEFORM FOR ANTI-TACHYCARDIA PACING FOR A SUBCUTANEOUS IMPLANTABLE CARDIOVERTER-DEFIBRILLATOR," now U.S. Pat. No. 6,856,835; and U.S. patent application Ser. No. 09/940,471, filed August 27, 2001 and entitled "POWER SUPPLY FOR A SUBCUTANEOUS IMPLANTABLE CARDIOVERTER-DEFIBRILLATOR," now U.S. Pat. No. 7,076,296; the disclosures of which applications are hereby incorporated by reference.

Please replace the paragraph beginning at line 1 of page 3 as follows:

In addition to epicardial and transvenous electrodes, subcutaneous electrode systems have also been developed. For example, U.S. Patent Nos. 5,342,407 and 5,603,732, the disclosures of which are incorporated herein by reference, teach the use of a pulse monitor/generator surgically implanted into the abdomen and subcutaneous electrodes implanted in the thorax. This system is far more complicated to use than current ICD

systems using transvenous lead systems together with an active can electrode and therefore it has no practical use. It has in fact never been used because of the surgical difficulty of applying such a device (3 incisions), the impractical abdominal location of the generator and the electrically poor sensing and defibrillation aspects of such a system.

Please replace the paragraph beginning at line 11 of page 9 as follows:

FIG. 28(a) is a front plan view of the embodiment of the lead electrode assembly of FIGS. 27(e) and (f) in an upright position;

Please replace the paragraph beginning at line 13 of page 9 as follows:

FIG. 28(b) is a front plan view of the embodiment of the lead electrode assembly of FIGS. 27(e) and (f) illustrating the ability of the fin to fold;

Please replace the paragraph beginning at line 1 of page 16 as follows:

Modifications to this arrangement are contemplated within the scope of the invention. One such modification is illustrated in FIG. 2 where the two sensing electrodes 25 and 23 are located distally and proximally, respectively, of the coil electrode 27. This may enable greater spacing, for example, depending on the length of the coil electrode 27, the sense electrodes may be about six to twelve cm apart. Note also that the optional anchor segment 52 is omitted. Further modifications of the canister 11 are noted below.

Please replace the paragraph beginning at line 3 of page 23 as follows:

Turning now to Fig. 14, a US-ICD of the present invention is illustrated. The US-ICD includes of a curved housing 1211 with a first end 1413 and a second end 1215. The first end 1413 is thicker than the second end 1215. This thicker area houses a battery supply, capacitor and operational circuitry for the US-ICD. The circuitry will be able to monitor cardiac rhythms for tachycardia and fibrillation, and if detected, will initiate charging the capacitor and then delivering cardioversion/defibrillation energy through two

cardioversion/defibrillating electrodes 1417 and 1219 located on the outer surface of the two ends of the housing. The circuitry can provide cardioversion/defibrillation energy in different types of waveforms. In the preferred embodiment, a biphasic waveform is used of approximately 10-20 ms total duration and with the initial phase containing approximately 2/3 of the energy, however, any type of waveform can be utilized such as monophasic, biphasic, multiphasic or alternative waveforms known in the art.

Please replace the paragraph beginning at line 13 of page 31 as follows:

In this embodiment, the electrical conductor 142 comprises three highly flexible, highly conductive coiled fibers known as filars 147 (phantom view). These fibers are wound in a helical shape through the electrically insulating sheath 141. In an alternate embodiment, the filars 147 lie as linear cables within the electrically insulating sheath 141. In another alternate embodiment, a combination of helically coiled and linear filars 147 [[lie]] lies within the electrically insulating sheath 141.

Please replace the paragraph beginning at line 13 of page 34 as follows:

A line 173 divides the first fin section 165 into a first half 171 and a second half 172. The line 173 runs parallel to the first side 175 of the first fin section 165. The first half 171 of the first fin section 165 lies on one side of line 173. The second half 172 of the first fin section 165 lies on the other side of the line 173. The second fin section 160 is a rectangular sheet of polymeric material of the same size as the first fin section 165 comprising an inside face 162 and an outside face 161. The second fin section 160 is divided in half substantially similarly to the first fin section 165, thereby forming a first half 163 and a second half 164 of the second fin section 160. In an alternate embodiment, the first fin section 165 and second fin section 160 are not rectangular in shape. In an alternate embodiment, the first fin section 165 and second fin section 160 have an oval shape.

Please replace the paragraph beginning at line 5 of page 56 as follows:

FIG. 35(a) is a perspective view of a patient's ribcage with an implanted S-ICD system. The S-ICD canister 11 is implanted subcutaneously in the anterior thorax outside the ribcage 1031 of the patient, left of the sternum 920 in the area over the fifth rib 1038 and sixth rib 1036. The S-ICD canister 11, however, may alternately be implanted anywhere over the area between the third rib and the twelfth rib. The lead 21 of the lead electrode assembly 100 is physically connected to the S-ICD canister 11 where the transthoracic cardiac pacing energy or effective ~~cardioversion/defibrillation~~ cardioversion/defibrillation shock energy (effective energy) is generated. The term "effective energy" as used in this specification can encompass various terms such as field strength, current density and voltage gradient.

Please replace the paragraph beginning at line 1 of page 75 as follows:

FIG. 46(a) illustrates a subcutaneous implantable cardioverter-defibrillator kit 1201 of the present invention. The kit comprises a group of items that may be used in implanting ~~[[a]]~~ an S-ICD system in a patient. The kit 1201 comprises a group of one or more of the following items: an S-ICD canister 11, a lead electrode assembly 100, a hemostat 1205, a lead electrode assembly manipulation tool 927, a medical adhesive 1210, an anesthetic 1215, a tube of mineral oil 1220 and a tray 1200 for storing these items. In one embodiment, the S-ICD canister 11 is the S-ICD canister 11 seen in, and discussed with reference to FIG. 1.